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Precision Determination of Baryon Masses including Isospin-breaking

Monday, July 31, 2023 4:40 PM (20 minutes)

We give an update on an ongoing project in which we calculate the masses of octet and decuplet baryons including isospin-breaking effects. To this end, we employ single- and two-state-fits to effective masses at leading and sub-leading order in the expansion in isospin-breaking parameters. In order to remove objective bias on asymptotic masses we furthermore compute an AIC-based model-average of our fits for which we show results on ensembles at lattice spacings of 0.064 fm and 0.076 fm with corresponding pion masses ranging from 220 MeV to 360 MeV.

Topical area

Hadronic and Nuclear Spectrum and Interactions

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